

Appl. No. 10/505,269  
Amdt. Dated June 1, 2006  
Reply to Office Action of March 2, 2006

# REMARKS

Claims 1 to 4 are currently pending in the present application. Claims 1 and 3 are amended herein. No new matter has been added by the amendments.

Claims 1 to 4 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. Specifically, the Action states that the language of claims 1 and 3, which states that the diode is coupled to the internal node so that a DC potential at a terminal of the diode, which controls on/off switching of the diode, is misdescriptive. The Action further states that the language of claims 1 and 3, which states that the DC potential, is determined by a potential of the internal node in opposition to on/off switching of the main current channels is unclear. The cited language has been removed from claims 1 and 3. Claim 1 now claims:

An electronic signal processing apparatus with a signal switch, the switch comprising:

a switch input, a switch output and an internal node;  
a first and a second depletion transistor, having main current channels coupled between the internal node and the switch input and output, respectively;  
a signal processing arrangement between the internal node and a reference terminal of the switch input and switch output, the signal processing arrangement comprising:

a diode; and  
a switch control circuit with a control output, coupled to the main current channels of the first and the second depletion transistor via the internal node so as to control conduction of the main current channels,

wherein the switch has a T-type attenuator structure having a leg and at least one branch, the diode being disposed in the leg of the T-type attenuator structure and at least one transistor being disposed in the branch of the T-type

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attenuator structure, the T-type structure enabling the switch to remain "on" even in the absence of a power supply voltage, and  
wherein the internal mode applies a control voltage that switches the switch to both the transmitter and the diode "off".

Applicants assert that a switch having a T-type attenuator structure for enabling the switch to remain "on" even in the absence of power supply voltage is definite as described.

Claim 3, similar to claim 1, now claims:

An electronic signal switch, the switch comprising  
a switch input, a switch output and an internal node;  
a first and a second depletion transistor, having main current channels coupled between the internal node and the switch input and switch output, respectively;  
a signal connection between the internal node and a reference terminal of the switch input and output, the signal connection comprising:  
a diode; and  
a control input, coupled to the main current channel of the first and the second depletion transistor via the internal node to control conduction of the main current channels,  
wherein the switch has a T-type attenuator structure having a leg and at least one branch, the diode being disposed in the leg of the T-type attenuator structure and at least one transistor being disposed in the branch of the T-type attenuator structure, the T-type structure enabling the switch to remain "on" even in the absence of a power supply voltage, and  
wherein the internal mode applies a control voltage that switches the switch to both the transmitter and the diode "off".

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Applicants assert that claims 1 and 3 are now definite and in appropriate form as required by 35 U.S.C. 112, second paragraph. Claims 2 and 4, depending from claims 1 and 3, respectively, are also in appropriate form due to the amendments to claims 1 and 3. Applicants respectfully request reconsideration of the rejection of claims 1 to 4.

Claims 1 to 4 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,595,847 to Weir (hereinafter "Weir"). Weir is cited for disclosing an electronic signal processing apparatus having a switch comprising a switch input, a switch output, an internal node, first and second depletion transistors, and a signal processing arrangement comprising a diode coupled between the internal node and a reference signal.

Applicants respectfully submit that Weir does not expressly or inherently disclose all of the elements set forth in independent claim 1, as amended. Thus, Weir does not anticipate claim 1 or claim 2, which depends therefrom.

Claim 1 now specifically claims a switch having a T-type attenuator structure. The T-type attenuator structure is clearly described as having a leg and at least one branch, the diode being disposed in the leg of the T-type attenuator structure and at least one transistor being disposed in the branch of the T-type attenuator structure. Claim 1 further claims that the T-type structure enables the switch to remain "on" even in the absence of a power supply voltage. The claimed transistors are depletion transistors or "normally-on" type transistors. Thus, they have a negative threshold voltage so that the main current channel conducts when the potential difference between the control electrode and the main current channel is zero.

T-type attenuator structures known in the art typically require a complicated control circuit because a third transistor has to be operated in phase opposition to the first and the second transistor. Moreover, known circuits do not allow the switch to switch off completely when the supply voltage is off. As stated in the present disclosure, it is an

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object of the invention to provide an apparatus having a signal switch which can be controlled with a less complicated circuit that passes signals when no power is supplied to the switch. It is also an object of the present invention to provide an apparatus having a signal switch that needs a minimal number of components to control the switch and yet provides a good on/off transmission ratio. The T-type attenuator structure of claim 1 provides a simple switch that is "on" when no power supply voltage is applied and that provides a good on/off transmission ratio.

Claim 1 now additionally claims that the internal mode applies a control voltage that switches the switch to both the transmitter and the diode "off". Thus, the claimed circuit makes it possible to use the internal node to apply the control voltage that switches the switch off to both the transistors and the diode. This unique structure ensures that separate connections and capacitors are not required for isolating the control voltage of the transistors and the diode from one another.

Weir fails to disclose a secondary station for use in a radio communication system as now claimed in claim 1. Specifically, Weir fails to disclose a switch having a T-type attenuator structure as described in claim 1, much less a simple structure that enables the switch to remain "on" even in the absence of a power supply voltage.

Claim 3 has been amended to claim:

An electronic signal switch, the switch comprising  
 a switch input, a switch output and an internal node;  
 a first and a second depletion transistor, having main current channels  
 coupled between the internal node and the switch input and switch output,  
 respectively;  
 a signal connection between the internal node and a reference terminal of  
 the switch input and output, the signal connection comprising:  
 a diode; and

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a control input, coupled to the main current channel of the first and the second depletion transistor via the internal node to control conduction of the main current channels,

wherein the switch has a T-type attenuator structure having a leg and at least one branch, the diode being disposed in the leg of the T-type attenuator structure and at least one transistor being disposed in the branch of the T-type attenuator structure, the T-type structure enabling the switch to remain "on" even in the absence of a power supply voltage, and

wherein the internal mode applies a control voltage that switches the switch to both the transmitter and the diode "off".

Claim 3, similar to claim 1, now claims a switch having a T-type attenuator structure having a leg and at least one branch, the diode being disposed in the leg of the T-type attenuator structure and at least one transistor being disposed in the branch of the T-type attenuator structure. Thus, claim 3 is patentable over Weir for at least the reasons discussed with respect to claim 1. Claim 4, depending from claim 3 and adding further features thereto, is patentable over Weir for at least the reasons discussed with respect to claim 3.

Accordingly, for at least these reasons, independent claims 1 and 3 are now patentable over Weir. Since claims 2 and 4 depend from claim 1 and provide further features thereto, claims 2 and 4 are distinguishable over Weir for at least the reasons discussed. Accordingly, the rejections under 35 U.S.C. § 102(b) of claims 1 to 4 should be withdrawn and claims 1 to 4 should be allowed.

### **Conclusion**

In view of the foregoing, Applicants respectfully submit that the specification, the drawings and all claims presented in this application are currently in condition for allowance. Accordingly, Applicants respectfully request favorable consideration and that this application be passed to allowance.

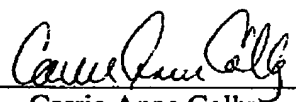
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Should any changes to the claims and/or specification be deemed necessary to place the application in condition for allowance, the Examiner is respectfully requested to contact the undersigned to discuss the same.

Applicants' representative believes that this response is being filed in a timely manner. In the event that any extension and/or fee is required for the entry of this amendment the Commissioner is hereby authorized to charge said fee to Deposit Account No. 14-1270. An early and favorable action on the merits is earnestly solicited.

If the Examiner should have any questions concerning this communication or feels that an interview would be helpful, the Examiner is requested to call David Barnes, Esq., Intellectual Property Counsel, Philips North America Corporation at the number below.

Respectfully submitted,

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